detection of the doorbell chime. By detecting the sound of the doorbell (e.g., by correctly classifying the doorbell based on received sound metadata), the noise cancellation functionality can be modified so that the user is able to hear the doorbell even while wearing noise-cancelling headphones. Various other approaches can be used to modulate performance parameters of headphones or other such devices based on the noise classification techniques described herein.

[0283] The specification is presented largely in terms of illustrative environments, systems, procedures, steps, logic blocks, processing, and other symbolic representations that directly or indirectly resemble the operations of data processing devices coupled to networks. These process descriptions and representations are typically used by those skilled in the art to most effectively convey the substance of their work to others skilled in the art. Numerous specific details are set forth to provide a thorough understanding of the present disclosure. However, it is understood to those skilled in the art that certain embodiments of the present disclosure can be practiced without certain, specific details. In other instances, well known methods, procedures, components, and circuitry have not been described in detail to avoid unnecessarily obscuring aspects of the embodiments. Accordingly, the scope of the present disclosure is defined by the appended claims rather than the forgoing description of embodiments.

[0284] When any of the appended claims are read to cover a purely software and/or firmware implementation, at least one of the elements in at least one example is hereby expressly defined to include a tangible, non-transitory medium such as a memory, DVD, CD, Blu-ray, and so on, storing the software and/or firmware.

1. A method for modifying a playback system comprising a plurality of playback devices, the method comprising:

measuring a first signal pattern for wireless signals between the plurality of playback devices;

measuring a second signal pattern for the wireless signals after measuring the first signal pattern between the plurality of playback devices;

determining an updated state of the playback system based on a difference between the second signal pattern and the first signal pattern; and

modifying state variables of one or more playback devices of the playback system based on the determined updated state.

2. The method of claim **1**, wherein the first signal pattern is a baseline signal pattern for a space between the plurality of playback devices, where the baseline signal pattern comprises a signal pattern measured at a particular time of day.

3. The method of claim **1**, wherein:

determining an updated state of the playback system comprises estimating positions of a set of one or more individuals in a space between the plurality of playback devices based on the difference between the second signal pattern and the first signal pattern; and

modifying the state variables of the playback devices of the playback system is based on the estimated positions of the set of individuals in the space.

4. The method of claim **3** further comprising learning location information for signal patterns, wherein estimating positions of the set of individuals in the space is based on the learned location information.

5. The method of claim **4**, wherein learning location information for signal patterns comprises:

measuring a plurality of signal patterns of the space at a plurality time instances;

localizing an individual in the space at each time instance; and

associating a location of the individual with the corresponding signal pattern;

wherein estimating the positions of the set of individuals comprises:

matching the second signal pattern to a particular signal pattern of the plurality of signal patterns; and

estimating a location for the set of individuals based on at least one associated location for the particular signal pattern.

6. The method of claim **5**, wherein localizing an individual comprises localizing a portable device associated with the individual.

7. The method of claim **5**, wherein localizing an individual comprises receiving input from the individual that indicates a location of the individual within the space.

8. A non-transitory machine readable medium containing processor instructions for managing a playback system comprising a plurality of playback devices, where execution of the instructions by a processor causes the processor to perform a process comprising:

receiving information indicative of a first signal pattern for wireless signals between the plurality of playback devices;

receiving information indicative of a second signal pattern for the wireless signals between the plurality of playback devices;

determining an updated state of the playback system based on a difference between the second signal pattern and the first signal pattern; and

modifying state variables of one or more playback devices of the playback system based on the determined updated state.

9. The non-transitory machine readable medium of claim **8** further comprising monitoring motion in a space between the plurality of playback devices, wherein the first signal pattern is measured when there is no motion measured in the space.

10. The non-transitory machine readable medium of claim **8**, wherein modifying the playback system comprises modifying a set of one or more playback parameters for audio content provided at the plurality of playback devices, wherein the set of playback parameters comprises at least one of the group consisting of equalizer settings, volume, bass, treble, balance, and fade.

11. The non-transitory machine readable medium of claim **8**, wherein the first signal pattern is a baseline signal pattern for a space between the plurality of playback devices, wherein the method further comprises periodically updating the baseline pattern.

12. The non-transitory machine readable medium of claim **11**, wherein updating the baseline pattern comprises computing an average pattern from signal strengths measured at various times of day.

13. The non-transitory machine readable medium of claim **11**, wherein updating the baseline pattern comprises:

detecting a lack of activity in the playback system;

measuring a third pattern of wireless signals between the plurality of playback devices; and

updating the baseline pattern with the third pattern.